Chapter 7
Selected Plan

A. *Selected Treatment Alternative*

Alternative 3 – Diffusers and Polishing Reactor

The selected treatment alternative is Alternative 3 – Diffusers and Polishing Reactor. This project is planned for the 0-2 year timeframe in order to address compliance issues at the plant. After the completion of these improvements the plant will comply with current KDPES permit limits. This alternative was previously described in Chapter 6. The selected alternative will have features described in the following paragraphs.

The existing screening channel will have a new mechanical inline grinder/ screen/ compactor installed to replace the existing unit. If the existing unit is in good condition it will be moved to the overflow channel to provide a redundant mechanical screening process. Also, the existing overflow weir plate will be raised to reduce overflow events. During overflow events, a number of large solids (i.e. wrappers) have passed into the lagoons through the manual bar screen. A few miscellaneous electrical modifications will be required at the screening channel, as well.

The existing Lagoon Cell No. 1 will be dewatered and the sludge and liner will be removed and disposed of. The lagoon will be regraded and a new liner installed. It will be divided into two cells with a floating baffle. The first cell will be converted in a complete mix cell with high rate diffusers. The second cell will be converted to a partially aerated settling cell with low rate diffuser. The new lagoon layout and aeration equipment will provide the WWTP with adequate treatment to meet existing KDPES permit limits

The existing Lagoon Cell No. 2 will be dewatered and the sludge and liner will be removed and disposed of. With the new aeration equipment and polishing reactor, the Lagoon Cell No. 2 will no long be needed for treatment. This lagoon will be abandoned.

A new polishing reactor will follow Lagoon Cell No. 1. The polishing reactor will consist of a concrete structure, polishing module, diffusers, and cover. The polishing reactor will provide additional ammonia-nitrogen treatment. Lagoon systems typically have difficulties treating ammonia-nitrogen during cold weather months. The polishing reactor will allow the WWTP to remain in compliance when the lagoons can't adequately remove the ammonia-nitrogen.

A new disinfection contact tank will be installed following polishing reactor. The contact tank will be designed to provide the appropriate detention time for PAA disinfection. Also, the contact tank will have a redundant channel to allow the tank to be cleaned while the WWTP remains in service.

A new PAA disinfection feed system will be installed next to the disinfection contact tank. The feed system will consist of a peristaltic pumps, piping, PAA chemical totes, eyewash shower, and spill containment.

Additional project features include: site piping, road work, miscellaneous equipment, electrical improvements, instrumentations/SCADA, and an emergency generator.

Exhibit 7-1 presents the flow diagram for the selected treatment alternative and Exhibit 7-2 presents the site layout for the selected treatment alternative.

Elements of this alternative that add value, but are not necessary for the Brandenburg WWTP to meet compliance standards, include: concrete and/or grating repairs at the existing screening, Box No. 1, and parshall flume, replacing flow dispersal pier and rip rap at outfall, replacing ceiling tiles in control building, and site lighting.

B. Wastewater Treatment Plant Effluent Discharge Limits and Reliability Requirements

The Kentucky Division of Water (KDOW) performed a waste load allocation analysis for Brandenburg's WWTP.

The proposed KPDES permit effluent limits and reliability requirements based on the waste load allocation analysis are presented in Appendix E. A summary of the proposed KPDES permit effluent limits and reliability requirements are presented in Table 7-1.

The selected treatment alternative will be designed to comply with the proposed KPDES effluent limits and reliability requirements. The plant does not currently have a Total Phosphorus limit, but is required to monitor plant effluent for Total Phosphorus (mg/l). Brandenburg's WWTP is not expected to have a Total Phosphorus limit due to the outfall being located on the Ohio River. If the WWTP receives a Total Phosphorus limit, new treatment processes will be required to meet the limit requirements.

Table 7-1
Proposed Monthly Average KPDES Permit Limits and Reliability Requirements

Effluent Parameter	Value
BOD_5	30 mg/l
TSS	30 mg/l
Ammonia-Nitrogen	20 mg/l
Dissolved Oxygen (min.)	2 mg/l
Total Residual Chlorine	0.019 mg/l
Total Nitrogen	Monitor
Total Phosphorus	Monitor
E. Coli	130 mg/l
Reliability Classification	Grade C

C. Influent Design Parameters

The selected alternative will be designed based on the influent parameters listed in Table 7-2.

The background for the influent design parameters were previously discussed in Chapter 4.

Table 7-2 2037 Brandenburg WWTP Influent Design Parameters	
Influent Parameter	**Value**
Average Daily Flow	0.312 MGD
Peak Hydraulic Flow	0.932 MGD
BOD_5	1052 lbs/day
BOD_5	404 mg/l
TSS	1000 lbs/day
TSS	384 mg/l
Ammonia-Nitrogen	70 lbs/day*
Ammonia-Nitrogen	27 mg/l*

*Based on the original WWTP design. It is recommended that the City begin sampling influent ammonia-nitrogen to determine, if this value has changed. If so, the design will be adjusted accordingly.

D. Cost Effectiveness Analysis

Table 7-3 below presents a summary of the present worth cost estimate for the selected treatment alternative. The selected treatment alternative (diffusers and polishing reactor) had the lowest total project cost ($3,312,382) and the lowest present worth cost ($9,550,000) of the alternatives considered.

Table 7-3 Project Cost Estimate Summary for Selected Treatment Alternative (diffusers and polishing reactor)	
Item	**Estimated Cost**
Total Project Cost	$3,312,382
Annual Operation and Maintenance	$419,374
Salvage Value	$131,920
Total Present Worth	$9,550,000

E. Non-monetary Effectiveness Analysis and Environmental Impact of Selected Alternative

The selected treatment alternative (diffusers and polishing reactor) had the lowest Non-monetary Effectiveness Unit score (132,271) of the treatment alternatives considered and meets the goals and objectives of the planning area without impacting environmentally sensitive areas. The lowest score equates to the alternative that is most capable of implementation. The selected treatment alternative will improve the overall environmental quality of the area by providing an effective treatment system that is able to treat current and projected flows while complying with KPDES permit limits.

The selected alternative will be constructed at the existing plant site and will not impact any new locations or receiving streams. The existing location is comfortably removed from residential areas and does not detrimentally affect the public.

F. Operation & Maintenance Requirements

The annual operation and maintenance cost for the selected alternative is estimated to be $419,374 (see Exhibit 6-3.3). Based on this cost estimate the plant upgrade is expected to increase annual operation and maintenance costs by approximately $12,500 per year between now and the end of the 20 year planning period. The modest increase in O&M is due to several pieces of equipment at the plant no longer being needed after the modifications. The new plant will have several new processes, including a new aeration system, polishing reactor, and PAA disinfection which will require new skill and knowledge development by plant operators. The operators have gained experience with PAA disinfection through the current pilot program.

G. Collection System Improvements

The potential expansion of the City of Brandenburg's Collection System has been broken out into the 3-10 year and 11-20 year planning phases. During the 0-2 year planning phase, the City will be completing upgrades at the WWTP. The 3-10 year and 11-20 year planning phases are expanding into areas that are currently on Brandenburg's water system. The City may or may

not choose to serve these potential customers, but since they are currently on the City's water system they would be the next locations for the City to expand.

A hydraulic model wasn't performed on the existing or proposed collection system for this Facilities Plan. If the City proceeds with designing and constructing the following planning phases, the completion of a hydraulic model is recommended. A hydraulic model would help establish capacity issues that exist with the system. In addition to CCTV identifying the areas that would potentially need to be replaced or rehabilitated, the model would be useful in establishing which sewers require upsizing.

a. 3-10 Year Planning Phase

Table 7-4 below summarizes the proposed 3-10 year collection system expansion to the existing Brandenburg Collection. The planning phase consists of two existing neighborhoods, located south of the existing service area (See Exhibit 2-6). In order to serve the neighborhoods, a combination of gravity sewer and force main will be required. The Four Oaks Road neighborhood will serve 22 houses along Four Oaks Road, Miles Lane, and Bruno Circle. A 4" force main from the neighborhood will tie into the collection system at a manhole near Armory Place. The Quail Run and Knollwood Road neighborhood will serve 83 houses along Old State Road, Knollwood Road, Kelly Lane, Quail Run Road, Oakwood Drive, Rebecca Court, and Blaine Court. A 4" force main from the neighborhood will tie into the collection system at a manhole off Old State Road.

Table 7-4
3-10 Year Planning Phase
Proposed Collection System Expansion

Four Oaks Road Neighborhood		
Gravity Sewer	8"	2,440'
Force Main	2"	910'
	4"	1,640'
Duplex Lift Stations	2	
Quail Run and Knollwood Road Neighborhood		
Gravity Sewer	8"	11,770'
Force Main	4"	2,810'
Duplex Lift Stations	7	

c. 11-20 Year Planning Phase

Table 7-5 below summarizes the proposed 11-20 year collection system expansion to the existing Brandenburg Collection. The planning phase consists of three existing neighborhoods and potential agricultural and industrial growth (See Exhibit 2-6). The three existing neighborhoods will be served by a combination of gravity sewer and force main will be required. The potential agricultural development will not contribute flow to the collection system. The potential industrial development is located near two existing pump stations, which should can be directly tied into from the development. The River Edge Road neighborhood will serve 21 houses along River Edge Road, River Edge Drive, and KY 228. An 8" gravity sewer from the neighborhood will tie into the collection system at the Brandenburg Bypass Pump Station. The Windsor Place and Sun Valley Road neighborhood will serve 61 houses along Fairground Road, Sun Valley Road, and Windsor Place. An 8" gravity sewer from the neighborhood will tie into the collection system at the Fairgrounds Road Pump Station. The Christian Church and Bud Wilson Road neighborhood will serve 65 houses along Christian Church and Bud Wilson Road. A 4" force main from the neighborhood will tie into the collection system at a manhole on Ready Mix Road.

Table 7-5 11-20 Year Planning Phase Proposed Collection System Expansion		
River Edge Road Neighborhood		
Gravity Sewer	8”	5,320’
Windsor Place and Sun Valley Road Neighborhood		
Gravity Sewer	8”	7,820’
Force Main	4”	2,000’
Duplex Lift Stations	1	
Christian Church and Bud Wilson Road Neighborhood		
Gravity Sewer	8”	8,780’
Force Main	2”	1,700’
	4”	4,150’
Duplex Lift Stations	7	

PLANT EFFLUENT TO OHIO RIVER

RIVERPORT A

RIVERPORT B

PLANT INFLUENT

COMPLETE MIX CELL

PARTIALLY AERATED SETTLING CELL

BOX NO. 2 (TBA)

CELL NO. 2 (TBA)

BOX NO. 1

POLISHING REACTOR

DISINFECTION CONTACT TANK

SCREEN CHANNEL

PARSHALL FLUME

PERACETIC ACID DISINFECTION

CONTROL BUILDING

CHLORINATION INDUCTION STATION (TBA)

BOX NO. 3 (TBA)

CLARIFIER/CONTACT BASINS (TBA)

DECANT MANHOLE (TBA)

SCUM/SLUDGE/DEWATER PUMP STATION (TBA)

BOX NO. 4 (TBA)

DECHLORINATION INDUCTION STATION (TBA)

SULFUR DIOXIDE ENCLOSURE (DEMOLISHED)

CHLORINE ENCLOSURE (DEMOLISHED)

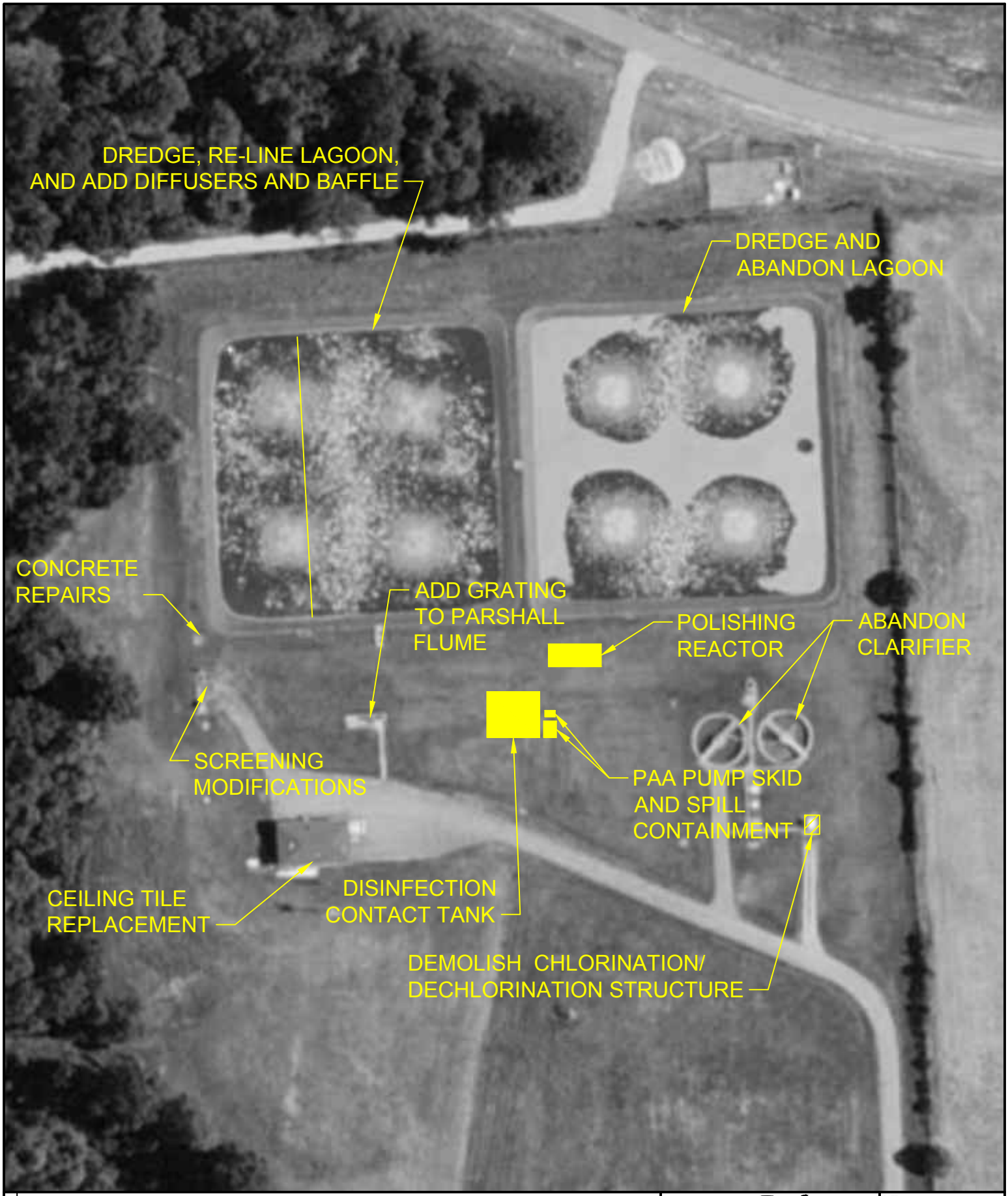
NOTE: TBA = TO BE ABANDONED

EXHIBIT 7-1
Selected Alternative
(Diffusers & Polishing Reactor)
Flow Diagram
WASTEWATER FACILITIES PLAN
CITY OF BRANDENBURG, KENTUCKY

engineering | architecture | geospatial

PRINTED: 9/20/2017 @ 3:12PM

FILE NAME: G:\4556-Bburg WW Plan\01-WW Plan Update\Working Drawings\AutoCAD\Exhibit 7-1 - Proposed Flow Diagram.dwg



GRW PROJECT NO. 4556-01

DIFFUSERS & POLISHING REACTOR SELECTED ALTERNATIVE

WASTEWATER FACILITIES PLAN
CITY OF BRANDENBURG, KENTUCKY

engineering | architecture | geospatial
www.grwinc.com

DATE: SEPT., 2017
SCALE: 1" = 100'
SHEET NO.
EXHIBIT 7-2

Chapter 8
Public Participation, Resolution and Authority

A. *Purpose*

The purpose of this chapter is to discuss the efforts by the City of Brandenburg to encourage public participation throughout the course of the plan preparation. The City considers the input of the public vital to the development of a functional plan consistent with the goals and objectives discussed in previous chapters. This chapter also presents the City and County resolution adopting the plan and the Statement of Authority and Resources for the plan.

B. *Facilities Plan Development*

The City of Brandenburg has actively participated throughout the development of this study. The Mayor of Brandenburg (Ronnie Joyner) and Public Works Director (T.J. Hughes) were both involved in numerous meetings with GRW to develop the Facilities Plan.

In addition, various agencies including the Kentucky Division of Water, US Fish and Wildlife, Kentucky Fish and Wildlife, US Army Corps of Engineers, State Historic Preservation Office, US Natural Resource Conservation Service, the Local Health Department, and others were contacted to assist in evaluation of the planning area.

C. *Public Hearing*

A public hearing will be held at the Brandenburg City Hall to present and discuss the Wastewater Facilities Plan to the City Council and Public. The date for the public hearing will be set once KDOW has completed a cursory review of the Facilities Plan. A public hearing notice will be published in the local newspaper in order to secure public participation. Appendix J contains the public hearing presentation, minutes, questions and answers, sign-in sheet, newspaper notices and affidavits from the newspaper showing the notice dates.

D. *City and County Resolution Endorsing Plan*

A copy of the City and County resolution endorsing the wastewater facilities plan is included in Appendix I.

E. *Statement of Authority and Resources*

The selected alternative for the Brandenburg Planning Area has been reviewed and approved by the City of Brandenburg, who will implement the Plan. The fiscal commitment necessary to implement the selected alternative is significant. The City has made a commitment to the citizens to provide the Planning Area with the most cost effective, environmentally sound, and implementable wastewater collection and treatment system which will meet all applicable Federal, State, and Local requirements.

Chapter 94 of the Kentucky Revised Statutes provides authorization for cities of all classes in Kentucky to provide sewerage facilities within and outside their corporate limits. Chapter 82 of the Kentucky Revised Statutes provides authorization for cities to finance public improvements through the issuance of either general obligation or revenue bonds. By having the legal authority to adjust user charges as necessary to implement the projects, Brandenburg has the financial capability to fund the selected alternative.

The City of Brandenburg has the necessary legal, financial, institutional and managerial resources to ensure the construction and annual O&M of the proposed improvements.

Chapter 9
Sewer Use Rates

A. Purpose

The purpose of this section is to present projected user costs and financing options for the selected project.

B. User Costs

The selected treatment plant upgrade alternative (Alternative 3 – Diffusers and Polishing Reactor) is recommended in the 0-2 year planning period. The projected annual operation and maintenance cost for the upgrade is $419,374 and the estimated total project cost for the plant upgrade is $3,312,382.

A preliminary sewer use rate analysis has been completed using a combination of loan and grant funds. No impact fees (i.e. new user tap fees) or recapture agreement fees were considered in the rate analysis. The analysis results are included as Exhibits 9-1 through 9-3. Three funding scenarios were evaluated: two using a loan at the current standard State Revolving Fund (SRF) interest rate of 1.75% over 20 years, along with a 0.2% administrative fee to fund the non-grant portion of the improvements and one using a loan at the current standard USDA Rural Development (RD) interest rate of 2.625% over 40 years. A copy of Brandenburg's existing user rates and charges can be found in Appendix G.

For funding Scenario 1, with no grant money and a 20 year loan interest rate of 1.75% (plus 0.2% administrative fee), sewer use rates are projected to increase from $26.19 per 4,000 gallons to $39.59 per 4,000 gallons for residents inside the city, and from $27.73 per 4,000 gallons to $41.92 per 4,000 gallons for residents outside the city.

For funding Scenario 2, with a 30% loan forgiveness and a 20 year loan interest rate of 1.75% (plus 0.2% administrative fee), sewer use rates are projected to increase from $26.19 per 4,000 gallons to $35.96 per 4,000 gallons for residents inside the city, and from $27.73 per 4,000 gallons to $38.07 per 4,000 gallons for residents outside the city.

For funding Scenario 3, with a 30% grant and a 40 year loan interest rate of 2.625%, sewer use rates are projected to increase from $26.19 per 4,000 gallons to $33.15 per 4,000 gallons for residents inside the city, and from $27.73 per 4,000 gallons to $35.10 per 4,000 gallons for residents outside the city.

It should be noted that these are preliminary rate calculations and a more detailed rate study must be completed in order to verify the actual rate increase required. The analysis provided here did not factor in other revenue sources such as new user tap fees or recapture agreement fees. In addition, this projected rate increase assumes that the existing finances are neutral and does not include any rate increase which may be necessary to bring current finances to a neutral position.

The collection system expansion recommended for the 3-10 year and 11-20 year planning periods will be implemented based on the City's desire to expand to these existing water system customers. The 3-10 year and 11-20 year collection system expansions were not included in the rate increase projection discussed above. Funding mechanisms will be worked out as the 3-10 and 11-20 year collection system projects are implemented.

C. Financing Options

One of the most important issues for any public utility is how to obtain project financing and be self-supporting. The City of Brandenburg's fee structure will need to generate enough revenue to cover debt and operating expenses through the life of any capital improvement projects.

Traditional funding methods include SRF and RD loans, general obligation bonds, and revenue bonds. There are also two other means with which sewer infrastructure could be financed without the City taking on sole responsibility for the debt. These are known as Recapture Agreements and Impact Fees.

1. Recapture Agreements

Growth can be spurred on by situations that encourage developers to build, but don't cause any economic hardship to the City. The use of a Recapture Agreement, similar to what the Louisville and Jefferson County Metropolitan Sewer District (MSD) employs is one of those situations where sewers and wastewater facilities can be constructed without forcing the public utility to front all of the capital.

In Jefferson County, the Agreement essentially allows a developer to construct and pay for regional sanitary sewer facilities — which must be approved by MSD — then transfer those facilities to MSD at no cost. As other properties within the watershed are then built up or urbanized, the developer can recapture the cost when homes or businesses connect to the system. To determine the amount of money a developer would "recapture" per development, they simply take the total project cost and divide it by the projected number of lots over how many years it should take to develop.

This method enables the expansion of sewer service to undeveloped areas surrounding an urban area without the utility going into debt to take on more customers. It should be noted, however, that MSD Recapture Agreements cannot be "piggybacked" onto one another. In other words, if developer "A" constructs one mile of sewer to develop some land they own, developer "B" cannot come back in five years and add another mile of sewer to develop more land upstream.

The reasoning behind the no "piggyback" rule is because then developer "A" may claim that they deserve a portion of the Recapture money from developer "B", seeing as the second development could never have happened had it not been for the sewer extension from the first development. Situations like that could get quite cumbersome and difficult to manage. In MSD's case, they made a decision based not so much on policy, but the ability to implement recapture agreements without creating unwieldy tracking scenarios caused by the "piggyback" situation.

2. Impact Fees

Another method of acquiring money for capital construction projects is through the use of Impact Fees. Generally, the Fees are created through an ordinance, which establishes rates and charges for hooking new residential, commercial, or industrial development onto the system. They are effectively capacity charges, and cover the cost of the municipality providing wastewater collection and treatment facilities. The Impact Fee is one-time only, and is paid prior to connection to the sewerage facilities.

The City of Shepherdsville, Kentucky's Fees Ordinance establishes the estimated flow for a single-family residential unit, while also stating that commercial and business estimated flow will be determined on a case-by-case basis. For developments served by City sewer extension, developers are required to pay the applicable charges immediately upon submission of the development plans to the City, or provide an Irrevocable Letter of Credit from a financial institution.

Shepherdsville's Ordinance based the cost of a gallon of wastewater on the construction costs for expanding their existing treatment plant. That cost was then multiplied by the number of gallons per day a single-family household produced to determine a total cost charged per household.

It should be noted that the flow per household could be calculated in a variety of ways. MSD, for example, assumes four persons per household at 100 gallons per day, equating to 400 gallons per day per household for new development.

Shepherdsville determined their flow per household to be 214 gallons per day for new development. Many municipalities choose to use population per

household from census data, and then multiply by 100 gallons per person per day.

For the purpose of this Facilities Plan, since the City of Brandenburg lumps their users into one category, the simplest method of calculating flow per capita would be to look at the total wastewater flow into the Brandenburg WWTP and dividing by the total number of customers. As stated in Chapter 4, this equates to 166.5 gallons per day per customer.

3. Traditional Financing

As mentioned earlier, there are traditional methods of financing that the City of Brandenburg will also need to explore. These include, but are not limited to, SRF loans, RD loans, general obligation bonds, and revenue bonds.

a. State Revolving Fund (SRF) Loans

Basic infrastructure — water, sewer, solid waste facilities, etc. — is a necessity for economic growth. Many Kentucky communities do not have that infrastructure available to their citizens, due in large part to the high costs of these services. The Kentucky Infrastructure Authority (KIA) was created in 1988 to provide the mechanism for funding construction of local public works projects. The Federally Assisted Clean Water State Revolving Loan, or Fund A, is the program administered through KIA that is applicable to wastewater.

Fund A currently has a standard interest rate of 2.75%, a non-standard interest rate of 1.75%, and non-standard hardship interest rate of 0.5%. Hardship rates require a community to be below the state median household income, be considered regional, or the project must assist the system to achieve compliance with an order or judgment addressing environmental non-compliance. If a project is only going to service a portion of the community, the hardship rate requirements apply only to that portion.

Repayment must be within 20 years of completion of a project, and must commence within one year of project completion. Priority of loan awards is based on project rankings from the water management council, and eligible projects must be for wastewater treatment facilities that comply with the Clean Water Act. An approved Facilities Plan must include the project for which funding is requested.

b. USDA Rural Development (RD) Loans

Formerly known as the "Farmers House Administration Program" (FmHA), the RD program is administered by the United States Department of Agriculture (U.S.D.A.). The RD program is primarily for rural residents, small cities, and towns with populations of 10,000 or less. The program uses low interest loan funds and grant funds to asset in the funding of water sanitary sewer projects. Interest rates are adjusted quarterly and may be obtained from any RD office. Currently, the market interest rate is 3.250%, intermediate interest rate is 2.625%, and poverty is 2.000%. If awarded, grant assistance, in some instances, can be up to 75% of edible project costs. Eligibility requirements for grant assistance are the same as for direct loans. Payback periods for debt service can be as long as 40 years; however, no repayment period will exceed State statutes or useful life of the facility.

Similar to SRF program, RD requires an application submittal along with a Preliminary Engineering Report (PER). Upon approval, a financing package of loans and grants is developed based on community's income level and its ability to meet certain user rate. The RD program estimates an acceptable user rate for the community based on median income levels and rates of similar systems. Consequently, the program typically does not provide grant assistance to projects that would have rates below the acceptable user rate. RD considers acceptable user rates to be in the range of $55 to $65 per month.

The RD program is allocated a certain amount of money each year. Once the demand has exhausted the supply, the applicants are prioritized based on several factors including income levels, service population, health hazards, and violations of local heath ordinances.

c. General Obligation Bonds

General obligation bonds offer investors a relatively safe vehicle for investment, while providing the necessary funds for community improvements to local governments. These bonds are backed by the full faith and credit of the issuing municipality, meaning that the municipality commits its full resources to paying bondholders. This includes general taxation and the ability to raise more funds through credit. The ability to back up these types of bond payments with tax funds is what makes them distinct from revenue bonds, which are repaid using the revenue generated by the specific project the bonds are issued to fund (i.e. sewer use fees).

The default risk of general obligation bonds is low due to the fact that the municipality has the option of raising taxes to meet its obligations. In addition, it is possible for municipalities to repay bondholders by borrowing more money. By calling a bond issue when interest rates fall, the municipality is stating that they will repay the principal before the bond matures. They can then re-fund the debt by making a new bond issue at a lower rate of interest, saving money in the process.

General obligation bonds give municipalities a tool with which to raise funds for projects that will not provide direct sources of revenue. As a result, they are typically used to fund projects that will serve an entire community. Revenue bonds, on the other hand, are used to fund projects that serve specific populations, who provide the revenue to repay the debt through user fees.

d. Revenue Bonds

Revenue bonds make up the vast majority of municipal bonds, and are available in a variety of issues. They are a type of municipal bond that is secured by a specific income of the issuer, which distinguishes them from general obligation bonds.

These types of bonds finance income-producing projects, and the income generated by these projects pays revenue bondholders their interest and principal. Projects funded by these types of bonds serve only that portion of a community that pays for it. In contrast, general obligation bonds do not produce income, but provide services for the entire community.

Most revenue bonds are sold in $5,000 units and mature in 20 to 30 years. However, not all the bonds in an issue necessarily mature at the same time — they may be staggered. The types of bonds with staggered maturity dates are called serial bonds.

Income from a municipal enterprise is placed into a revenue fund. From this fund, operations expenses are paid first. Only after this has occurred do revenue bondholders receive their payments.

Unlike general obligation bonds, revenue bonds are secured by specific collateral — the income produced by the projects they fund. The revenues (i.e. sewer use fees) produced are then used to pay investors.

Revenue bonds offer higher interest rates than general obligation bonds. This is because the income from the projects they fund cannot be predicted with absolute certainty, which adds to the perception of lower safety. If the projects do not produce enough revenue, the bonds may default.

Ratings firms rate revenue bond issuers for their ability to pay back both interest and principal. Bond analysts study the issuer's ability to produce income sufficient enough to make payments. They also evaluate the cash flow of the income source, since the success of a bond ultimately depends on the project's ability to produce revenue.

4. Project Financing Plan

The City of Brandenburg will apply for either a State Revolving Fund (SRF) or USDA Rural Development (RD) Loans for the project. The City will repay the loan from revenues generated by the wastewater utility. Brandenburg will need to conduct a User Charge Study. The Study will indicate how City needs to structure sewer user rates in order to pay debt service, operation, and maintenance costs for the system. The City of Brandenburg will potentially look into constructing the selected alternative in phasing based on the funding received from the SRF or RD.

Exhibit 9-1
Brandenburg Facilities Plan
State Revolving Fund (SRF)
Proposed Rate Schedule (1.75% Interest, No Loan Forgiveness)
Revenue Required
Phase I (0-2 Year Planning Period)

Total Project Cost - WWTP			$3,312,382
		Total	*$3,312,382*
Proposed Loan			$3,312,382
Annual Debt Service			$201,598
(Includes 0.2% Administrative Fee)			
20 years @	1.95%		
Loan Forgiveness	0.00%		$0
Existing Annual O & M			$397,800
Estimated Annual O & M			$419,374
Incremental O & M Increase			$21,574
Total Annual Revenue Required			**$223,172**
Total number of customers			1,387
Estimated customers inside city	99.0% of total		1,374
Estimated customers outside city	1.0% of total		14
Current inside city rate (for 4,000 gallons/month)			$26.19
Current outside city rate (for 4,000 gallons/month)			$27.73
Proposed inside city rate (for 4,000 gallons/month)			**$39.59**
Proposed outside city rate (for 4,000 gallons/month)			**$41.92**

Exhibit 9-2
Brandenburg Facilities Plan
State Revolving Fund (SRF)
Proposed Rate Schedule (1.75% Interest, 30% Loan Forgiveness)
Revenue Required
Phase I (0-2 Year Planning Period)

Total Project Cost - WWTP		$3,312,382
	Total	*$3,312,382*
Proposed Loan		$3,312,382
Annual Debt Service		$201,598
(Includes 0.2% Administrative Fee)		
20 years @ 1.95%		
Loan Forgiveness 30.00%		$60,479
Existing Annual O & M		$397,800
Estimated Annual O & M		$419,374
Incremental O & M Increase		$21,574
Total Annual Revenue Required		**$162,693**
Total number of customers		1,387
Estimated customers inside city	99.0% of total	1,374
Estimated customers outside city	1.0% of total	14
Current inside city rate (for 4,000 gallons/month)		$26.19
Current outside city rate (for 4,000 gallons/month)		$27.73
Proposed inside city rate (for 4,000 gallons/month)		**$35.96**
Proposed outside city rate (for 4,000 gallons/month)		**$38.07**

Exhibit 9-3
Brandenburg Facilities Plan
Rural Development (RD)
Proposed Rate Schedule (2.625% Interest, 30% Grant)
Revenue Required
Phase I (0-2 Year Planning Period)

Total Project Cost - WWTP			$3,312,382
		Total	*$3,312,382*
Proposed Loan			$3,312,382
Annual Debt Service			$134,746
40 years @	2.63%		
Grant	30.00%		$40,424
Existing Annual O & M			$397,800
Estimated Annual O & M			$419,374
	Incremental O & M Increase		$21,574
Total Annual Revenue Required			**$115,896**
Total number of customers			1,387
Estimated customers inside city	99.0% of total		1,374
Estimated customers outside city	1.0% of total		14
Current inside city rate (for 4,000 gallons/month)			$26.19
Current outside city rate (for 4,000 gallons/month)			$27.73
Proposed inside city rate (for 4,000 gallons/month)			**$33.15**
Proposed outside city rate (for 4,000 gallons/month)			**$35.10**

Appendix A

Brandenburg Agreed Order

COMMONWEALTH OF KENTUCKY
ENERGY AND ENVIRONMENT CABINET
DIVISION OF ENFORCEMENT
CASE NO. DOW-150453

IN RE: Brandenburg WWTP
Buttermilk Falls Rd
Brandenburg, KY 40108
AI No. 3115
Activity ID No. ERF20150001

AGREED ORDER

****

WHEREAS, the parties to this Agreed Order, the Energy and Environment Cabinet (hereinafter "Cabinet") and the Brandenburg WWTP (hereinafter "Brandenburg") state:

STATEMENTS OF FACT

1. The Cabinet is charged with the statutory duty of enforcing KRS Chapter 224 and the regulations promulgated pursuant thereto.

2. Brandenburg owns and operates a municipal wastewater treatment plant (WWTP) located on Buttermilk Falls Rd, Brandenburg, KY 40108, Meade County, Kentucky.

3. Brandenburg operates the WWTP under Kentucky Pollutant Discharge Elimination System (KPDES) permit KY0021474 for treated domestic wastewater discharges, issued by the Cabinet's Division of Water (hereinafter "DOW"), for the facility described in paragraph two (2).

4. On or about May 29, 2012, authorized representatives of the Cabinet identified the following violations of KRS Chapter 224 and the regulations promulgated pursuant thereto at the facility described in paragraph two (2) above. On July 12, 2012, the Cabinet issued Brandenburg a Notice of Violation for the following violations:

a. 401 KAR 5:056--Outfall 001-2, for Total Suspended Solids (TSS) during the months of May and July 2011, and February, March and April 2012;

b. 401 KAR 5:056--Outfall 001-2, for Suspended Solids Percent Removal (SS%) during the months of February, March, April and May 2012;

c. 401 KAR 5:056--Outfall 001-2, for Total Ammonia Nitrogen (TAN) during the month of February 2012;

d. 401 KAR 5:056--Outfall 001-2, for Biochemical Oxygen Demand (BOD) during the month of May 2011; and

e. 401 KAR 5:056--Outfall 001-2, for E. coli during the month of June 2011.

5. On or about September 28, 2015, authorized representatives of the Cabinet identified the following violations of KRS Chapter 224 and the regulations promulgated pursuant thereto at the facility described in paragraph two (2) above. On September 28, 2015, the Cabinet issued Brandenburg a Notice of Violation for the following violations:

a. 401 KAR 5:056 --Outfall 001-2, for pH during the month of January 2013;

b. 401 KAR 5:056 --Outfall 001-2, for TSS Loading during the months of July 2013; January, February, April, May, June, and October 2014; and April 2015;

c. 401 KAR 5:056 --Outfall 001-2, for TSS Concentration during the months of January, February, March, April, June, July, November, and December 2013; January, February, March, April, May, June, and July 2014; and February and April 2015;

d. 401 KAR 5:056 --Outfall 001-2, for SS% during the months of January, February, and March 2013; January, March, May and June 2014; and February 2015;

e. 401 KAR 5:056 --Outfall 001-2, for TAN during the months of February, March, April, May and June 2013; January, February, March, April, May, June and July 2014; and January, February, and April 2015;

f. 401 KAR 5:056 --Outfall 001-2, for BOD during the months of April 2013; and April, May, June, July and August 2014; and

g. 401 KAR 5:056 --Outfall 001-2, for E. coli during the month of June 2015.

6. On or about February 26, 2016, authorized representatives of the Cabinet identified the following violations of KRS Chapter 224 and the regulations promulgated pursuant thereto at the facility described in paragraph two (2) above. On February 26, 2016, the Cabinet issued Brandenburg a Notice of Violation for the following violations:

a. 401 KAR 5:056 --Outfall 001-2, for E coli during the months of August, October, and December 2015; and

b. 401 KAR 5:056 --Outfall 001-2, for TSS during the months of November and December 2015.

7. Representatives of Brandenburg attended an administrative conference with the Cabinet's Division of Enforcement (hereinafter "DENF") in Frankfort, Kentucky, on February 11, 2016, and admitted to the violations described in this Agreed Order.

8. **NOW THEREFORE**, in the interest of settling all civil claims and controversies involving the violations described above, the parties hereby consent to the entry of this Agreed Order and agree as follows:

REMEDIAL MEASURES

9. At all times, Brandenburg shall report to the Cabinet all spills, bypass discharges, upset condition discharges or the releases of substances from its facility identified in paragraph 2 above which would result in or contribute to the pollution of the waters of the Commonwealth,

including emergency and accidental releases, in accordance with KRS 224.1-400, 401 KAR 5:015, and 401 KAR 5:065. Brandenburg shall make its initial report of the above discharges or releases to the DOW Louisville Regional Office, 502-429-7122 during normal work hours and the Cabinet's 24-hour notification number, 800-928-2380 or 502-564-2380;

10. At all times, Brandenburg shall provide for proper and regular operation and maintenance to its sewage collection system and WWTP in accordance with 401 KAR 5:065 and its permit conditions;

11. Within thirty (30) days upon execution of this Agreed Order, Brandenburg shall submit to DENF for review and acceptance, a written plan for Corrective Actions (CAP) to bring the facility into compliance with its KPDES permit. The CAP shall include, but not be limited to, an identification of actions Brandenburg shall implement to ensure compliance with permit requirements including: proper operation and maintenance to its WWTP and collection system; a list of all actions necessary to ensure the completion of upgrades to the WWTP and collection systems; a list of completion dates for each action identified; a requirement to maintain and provide copies of inspection logs; and a final compliance date for completion of all remedial measures included in the CAP;

a. Upon review of the CAP, the Cabinet may, in whole or in part, (1) accept or (2) provide comments to Brandenburg identifying the deficiencies. Upon receipt of Cabinet comments, Brandenburg shall have thirty (30) days to revise and resubmit the CAP for review and acceptance. Upon resubmittal, the Cabinet may, in whole or in part, (1) accept or (2) disapprove and provide comments to Brandenburg identifying the deficiencies. If the resubmitted CAP is disapproved, the Cabinet may deem Brandenburg to be out of compliance with this Agreed Order for

failure to timely submit the CAP and may assess stipulated penalties pursuant to paragraph 17 below to this Agreed Order.

b. Brandenburg shall implement the corrective actions in accordance with the schedule of implementation contained in the accepted CAP, Amended CAP or any accepted part thereof (provided that the accepted part is not dependent upon implementation of any part not yet accepted) at its facilities.

c. Brandenburg may request an amendment of the accepted CAP by writing the Director of the Division of Enforcement at 300 Fair Oaks Lane, Frankfort, Kentucky 40601 and stating the reasons for the request. If granted, the Amended CAP shall not affect any provision of this Agreed Order unless expressly provided in the Amended CAP. This does not require an amendment request pursuant to paragraph twenty-four (24). of this Agreed Order.

12. Immediately cease all discharges that are aesthetically or otherwise degrading the waters of the Commonwealth;

13. All submittals from Brandenburg required by the terms of this Agreed Order shall be submitted to:

Division of Enforcement
Attention: Director
~~300 Fair Oaks Lane~~ 300 Sower Blvd. 3rd Floor
Frankfort, KY 40601

14. By the date specified in the CAP, Brandenburg shall be in compliance with KRS 224, and the regulations promulgated pursuant thereto, KPDES Permit No. KY0021474, and this Agreed Order.

PENALTIES

15. Brandenburg shall pay a civil penalty in the amount of three thousand ($3,000) dollars for the violations described in paragraphs four through six (4-6) above. The penalty shall be tendered by Brandenburg to the Cabinet within thirty (30) days of execution of this Agreed Order.

16. Payment of penalties shall be by cashier's check, certified check, or money order, made payable to "Kentucky State Treasurer" and shall be sent to the attention of: Director, Division of Enforcement, 300 ~~Fair Oaks Lane~~ Sower Blvd. 3rd Floor, Frankfort, Kentucky 40601. Please note "**Case No. DOW-150453**" on the instrument of payment.

STIPULATED PENALTIES

17. Following the execution of this Agreed Order and until its termination, a stipulated penalty for violations may be assessed as follows:

A. For each parameter exceedance in excess of 200% of the permitted limit, a stipulated penalty in the amount of one thousand ($1,000) dollars per exceedance may be assessed.

B. For each parameter exceedance between 0-199% of the permitted limit, a stipulated penalty in the amount of five hundred ($500) dollars per exceedance may be assessed;

C. For each failure to timely complete each action identified in the accepted Corrective Action Plan as specified in paragraph eleven (11), a stipulated penalty in the amount of one thousand ($1,000) dollars per instance may be assessed.

18. Stipulated penalties are in addition to and not in lieu of any other penalty which could be assessed by the Cabinet. The Cabinet may, in its discretion, waive stipulated penalties

that would otherwise be due. The stipulated penalty shall be due and owing within thirty (30) days after Brandenburg's receipt of written notification by the Cabinet to Brandenburg at the permitted address.

19. If Brandenburg believes the request for payment of a stipulated penalty is erroneous or contrary to law, Brandenburg may request a hearing in accordance with KRS 224.10-420(2). A request for hearing does not excuse timely payment of the penalty. If an order is entered pursuant to KRS 224.10-440 that excuses payment, the Cabinet will refund the payment. Failure to make timely payment shall constitute an additional violation.

20. Payment of the stipulated penalty shall be by cashier's check, certified check, or money order, made payable to "Kentucky State Treasurer" and shall be sent to the attention of: Director, Division of Enforcement, 300 Fair Oaks Lane, Frankfort, Kentucky 40601. Please note "**Case No. DOW-150453**" on all instruments of payment.

MISCELLANEOUS PROVISIONS

21. This Agreed Order addresses only the violations specifically alleged above. Other than those matters resolved by entry of this Agreed Order, nothing contained herein shall be construed to waive or to limit any remedy or cause of action by the Cabinet based on statutes or regulations under its jurisdiction and Brandenburg reserves its defenses thereto. The Cabinet expressly reserves its right at any time to issue administrative orders and to take any other action it deems necessary that is not inconsistent with this Agreed Order, including the right to order all necessary remedial measures, assess penalties for violations, or recover all response costs incurred, and Brandenburg reserves its defenses thereto.

22. This Agreed Order shall not prevent the Cabinet from issuing, reissuing, renewing, modifying, revoking, suspending, denying, terminating, or reopening any permit to

Brandenburg. Brandenburg reserves its defenses thereto, except that Brandenburg shall not use this Agreed Order as a defense.

23. Brandenburg waives its right to any hearing on the matters admitted herein. However, failure by Brandenburg to comply strictly with any or all of the terms of this Agreed Order shall be grounds for the Cabinet to seek enforcement of this Agreed Order in Franklin Circuit Court and to pursue any other appropriate administrative or judicial action under KRS Chapter 224 and the regulations promulgated pursuant thereto.

24. The Agreed Order may not be amended except by a written order of the Cabinet's Secretary or his designee. Brandenburg may request an amendment by writing the Director of the Division of Enforcement at 300 Fair Oaks Lane, Frankfort, Kentucky 40601, and stating the reasons for the request. If granted, the amended Agreed Order shall not affect any provision of this Agreed Order unless expressly provided in the amended Agreed Order.

25. The Cabinet does not, by its consent to the entry of this Agreed Order, warrant or aver in any manner that Brandenburg's complete compliance with this Agreed Order will result in compliance with the provisions of KRS Chapter 224 and the regulations promulgated pursuant thereto. Notwithstanding the Cabinet's review and approval of any plans formulated pursuant to this Agreed Order, Brandenburg shall remain solely responsible for compliance with the terms of KRS Chapter 224 and the regulations promulgated thereto, this Agreed Order, and any permit and compliance schedule requirements.

26. Brandenburg shall give notice of this Agreed Order to any purchaser, lessee or successor in interest prior to the transfer of ownership and/or operation of any part of the facility occurring prior to termination of this Agreed Order, shall notify the Cabinet that such notice has been given, and shall follow all statutory requirements for a transfer. Whether or not a transfer

takes place, Brandenburg shall remain fully responsible for payment of all civil penalties and for performance of all remedial measures identified in this Agreed Order.

27. The Cabinet agrees to allow the performance of the above listed remedial measures and payment of civil penalties by Brandenburg to satisfy Brandenburg's obligations to the Cabinet generated by the violations above.

28. The Cabinet and Brandenburg agree that the remedial measures agreed to herein are facility-specific and designed to comply with the statutes and regulations cited herein. This Agreed Order applies specifically and exclusively to the unique facility referenced herein and is inapplicable to any other site or facility.

29. Compliance with this Agreed Order is not conditioned upon the receipt of any federal, state, or local funds.

30. This Agreed Order shall be of no force and effect unless and until it is entered by the Secretary or his designee as evidenced by his signature thereon. If this Agreed Order contains any date by which Brandenburg is to take any action or cease any activity, and the Secretary enters the Agreed Order after that date, then Brandenburg is nonetheless obligated to have taken the action or ceased the activity by the date contained in this Agreed Order.

TERMINATION

31. This Agreed Order shall terminate upon Brandenburg's completion of all requirements described in this Agreed Order. Brandenburg may submit written notice to the Cabinet when it believes all requirements have been performed. The Cabinet will notify Brandenburg in writing of whether it intends to agree with or object to termination. The Cabinet reserves its right to enforce the Agreed Order, and Brandenburg reserves its right to file a petition for hearing pursuant to KRS 224.10-420(2) contesting the Cabinet's determination.

AGREED TO BY:

Ronnie Joyner, Mayor
City of Brandenburg

4-19-16
Date

APPROVAL RECOMMENDED BY:

Jeffrey A. Cummins, Director
Division of Enforcement

5/17/16
Date

John G. Horne, II, Executive Director
Office of General Counsel

6/7/2016
Date

DOW-150453

ORDER

Wherefore, the foregoing Agreed Order is entered as the final Order of the Energy and Environment Cabinet this 14th day of June, 2016.

ENERGY AND ENVRIONMEN CABINET

Scott W. Brinkman

SCOTT W. BRINKMAN, SECRETARY of the
GOVERNOR'S EXECUTIVE CABINET

CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of the foregoing **AGREED ORDER** was mailed, postage prepaid, to the following this 14th day of June, 2016.

City of Brandenburg
Attn: Hon. Ronnie Joyner
737 High Street
P.O. Box 305
Brandenburg, KY 40108

and mailed, messenger to:

Jeffrey A Cummins, Director
Division of Enforcement
300 ~~Fair Oaks Lane~~ Sower Blvd 3rd Floor
Frankfort, Kentucky 40601

John G. Horne, II, General Counsel
Energy and Environment Cabinet
~~500 Capital Plaza Office Tower~~
~~12th Floor~~ 300 Sower Blvd 3rd Floor
Frankfort, KY 40601

Kathy McDonald
DOCKET COORDINATOR

FBT
SH

Appendix B

Brandenburg Corrective Action Plan (CAP)

City of Brandenburg

737 HIGH STREET POST OFFICE BOX 305 BRANDENBURG, KENTUCKY 40108 PHONE 270-422-4981 FAX 270-422-4983

August 15, 2016

Mr. Corey Craft
Energy and Environment Cabinet
Division of Enforcement
300 Sower Blvd
Frankfort, KY 40601

Re: AI Name: Brandenburg WWTP
AI No. 3115
Case No. DOW -150453
Activity No. ERF20150001
Facility ID: KY0021474
Meade County
Corrective Action Plan

Dear Mr. Craft:

In response to your E-mail sent July 18, 2016, we offer the following for your consideration:

Item 10 – Proper and Regular Operation and Maintenance to the Collection system and Wastewater Treatment Plant (WWTP) – Daily/Monthly/Yearly checklist covering all aspects of the collection system and wastewater treatment plant have been written in order for the operators to verify that all tasks/process control testing/and other maintenance is being performed in a timely manner.

Representatives from both GRW Engineers and Kentucky Rural Water visited the WWTP site on August 10, 2016 with City staff. It was determined that a Wastewater Facilities Plan Update should be completed prior to the onset of any construction projects. The completion of a Wastewater Facilities Plan Update will enable the City of Brandenburg to plan necessary wastewater collection and treatment improvements in a systematic manner. These improvements will allow the system to meet current and projected KPDES permit requirements.

The wastewater treatment plant has been in operation since August of 1994 with no major upgrades until June of 2014. Between June 2014 and June 2016 the City has spent $120,921.75 on upgrades including new aerator, new electrical service, and new feed pumps for the chlorine and sulphur dioxide system. An itemized list follows:

- Materials to install aerators $ 870.37
- Submersible pump for chemical injection $ 359.90
- Service run, wiring for chemical pump, transformers, injector $ 2,621.48

• Service run for RAS pump	$ 870.00
• 4 Aqua-Jet aerators	$ 38,900.00
• Rewiring auger system	$ 8,650.00
• 2 Aqua-Jet aerators	$ 19,450.00
• 2 Aqua-Jet aerators	$ 19,450.00
• Labor/material to install new clarifier drive and torque control	$ 29,750.00
Total	**$120,921.75**

The proposed Corrective Action Plan Schedule can be found on the following page. If you further questions, please contact me at my office, phone number 270-422-4981.

Sincerely,

Ronnie Joyner
Mayor, City of Brandenburg

Brandenburg Wastewater System Improvements Program
Corrective Action Plan Schedule
August 15, 2016

Task/Milestone	Completion Schedule
Planning Phase Interim Financing Loan	
Funding Application	09-30-2016
Completion of Audits	09-30-2016
Funding Committed to Brandenburg	12-31-2016
Wastewater Collection System Mapping	01-31-2017
Wastewater Facilities Plan Update	09-30-2017
KYDOW Approval of Wastewater Facilities Plan Update	12-31-2017
Funding Application (Rural Development and/or SRF) for WWTP Improvements (2019 Funding Cycle)	09-30-2017
Wastewater Treatment Plant Upgrades	12-31-2021

From: Craft, Corey (EEC)
To: Pavoni, Joe
Subject: City of Brandenburg CAP
Date: Wednesday, February 01, 2017 8:49:01 AM

Mr. Pavoni,

The CAP submitted by the City of Brandenburg was accepted, I believe I spoke with TJ Hughes from the City of Brandenburg about this by phone, but no letter of acceptance was sent. Will this email suffice?

Thank you,

Corey A. Craft
Environmental Protection Specialist
Division of Enforcement
Kentucky Department for Environmental Protection
300 Sower BLVD, 3rd Floor
Phone (502) 782-6865
Fax (502) 564-4245
http://dep-enforcement.ky.gov

Appendix C

Planning Area Boundaries

&

Phases

OHIO RIVER

KY 228

KY 1692

KY 79

BYPASS RD

KY 710

KY 448

KY 933

Legend

- Brandenburg WWTP
- 1990 Planning Area Boundary
- Planning Area Boundary
- Brandenburg City Limits
- Roads
- Existing Service Area
- 0-2 Year Planning Area
- 3-10 Year Planning Area
- 11-20 Year Planning Area

0 2,000 4,000 Feet

EXHIBIT 2-6
Planning Area Phasing

WASTEWATER FACILITIES PLAN
CITY OF BRANDENBURG, KENTUCKY

9-27-17

engineering | architecture | geospatial

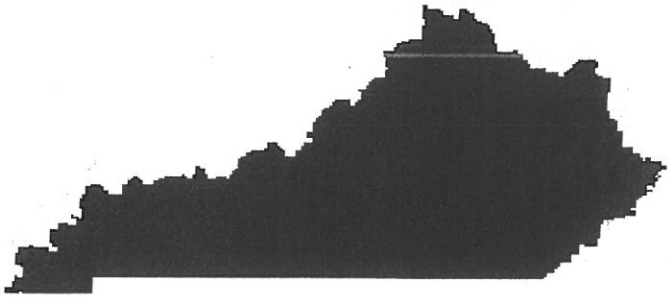
Map Document: (G:\4566-Bburg\WW Plan\01-WW Plan Update\Working Drawings\GIS\Exhibit 2-6 - Planning Area Phasing.mxd) 4/6/2017 -- 11:01:50 AM

Appendix D

Brandenburg WWTP

KPDES Permit

KPDES



KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT

PERMIT NO.: KY0021474

AI NO.: 3115

AUTHORIZATION TO DISCHARGE UNDER THE

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

Pursuant to Authority in KRS 224,

City of Brandenburg
737 High Street
Brandenburg, Kentucky, 40108

is authorized to discharge from a facility located at

Brandenburg Wastewater Treatment Plant
Buttermilk Falls Road
Brandenburg, Meade County, Kentucky

to receiving waters named

Ohio River (38°00'35"N & 86°08'55"W)

in accordance with effluent limitations, monitoring requirements and other conditions set forth in this permit.

This permit shall become effective on February 1, 2016.

This permit and the authorization to discharge shall expire at midnight, January 31, 2021.

Sara J Beard

December 21, 2015

Date Signed

Peter T. Goodmann, Director
Division of Water

THIS KPDES PERMIT CONSISTS OF THE FOLLOWING SECTIONS.

SECTION 1

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. EFFLUENT AND MONITORING REQUIREMENTS

1.1. Compliance Monitoring Locations (Outfalls)

The following table lists the outfalls authorized by this permit, the latitude and longitude of each and the DOW assigned KPDES outfall number.

TABLE 1.

No.	Treatment Provided	Latitude (N)	Longitude (W)	Receiving Waters	Description of Outfall
001	Screening (1-T), Grit Removal (1-M), Grinding (1-L), Sedimentation (1-U), Rotating Biological Contactors (3-I), 2-Cell Lagoon (3-Q), Chlorine Disinfection (2-F), Dechlorination (2-E), Discharge to Surface Water (4-A)	38°00'35"	86°08'55"	Ohio River	Domestic-Sanitary Wastewater (DSW)

1.2. Effluent Limitations and Monitoring Requirements

Beginning on the effective date and lasting through the term of this permit discharges from Outfall 001 shall comply with the effluent limitations

TABLE 2.

Effluent Characteristic	STORET Code	Units	EFFLUENT LIMITATIONS						MONITORING REQUIREMENTS	
			Loadings (lbs/day)		Concentrations					
			Monthly Average	Maximum Weekly Average	Minimum	Monthly Average	Maximum Weekly Average	Maximum	Frequency	Sample Type
Flow, Effluent (0.312 MGD design capacity)	50050	MGD	Report	Report	N/A	N/A	N/A	N/A	Continuous	Recorder
Flow, Influent	50050	MGD	Report	Report	N/A	N/A	N/A	N/A	Continuous	Recorder
BOD_5[1], Effluent	00310	mg/l	78.0	117.0	N/A	30.0	45.0	N/A	1/Week	24 Hr Composite[2]
BOD_5[1], Influent	00310	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Week	24 Hr Composite[2]
BOD_5[1] ,Percent Removal	81010	%	N/A	N/A	N/A	85	N/A	N/A	1/Month	Calculated[3]
TSS, Effluent	00530	mg/l	78.00	117.0	N/A	30	45	N/A	1/Week	24 Hr Composite[2]
TSS, Influent	00530	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Week	24 Hr Composite[2]
TSS (Percent Removal)	81011	%	N/A	N/A	N/A	85	N/A	N/A	1/Month	Calculated[3]
Ammonia (as mg/l NH_3N)	00610	mg/l	52.0	78.0	N/A	20.0	30.0[4]	N/A	1/Week	24 Hr Composite[2]
E. Coli[5]	51040	#/100 ml	N/A	N/A	N/A	130[6]	240[7]	N/A	1/Week	Grab
Dissolved Oxygen	00300	mg/l	N/A	N/A	2.00	N/A	N/A	N/A	1/Week	Grab
pH	00400	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Week	Grab

TABLE 2.											
EFFLUENT LIMITATIONS										MONITORING REQUIREMENTS	
Effluent Characteristic	STORET Code	Units	Loadings (lbs/day)		Concentrations					Frequency	Sample Type
			Monthly Average	Maximum Weekly Average	Minimum	Monthly Average	Maximum Weekly Average	Maximum			
Total Residual Chlorine	50060	mg/l	N/A	N/A	N/A	0.011	0.019[4]	N/A		1/Week	Grab
Total Phosphorus	00665	mg/l	N/A	N/A	N/A	Report	Report[4]	N/A		1/Week	24 Hr Composite[2]
Total Nitrogen[8]	00600	mg/l	N/A	N/A	N/A	Report	Report[4]	N/A		1/Week	24 Hr Composite[2]
The Design Flow of the POTW is 0.312 MGD. The Average Annual Flow of the POTW is 0.08 MGD											
[1]BOD_5 – Biochemical Oxygen Demand, 5-day											
[2]A 24-hour composite is a sample collected using an automated sampler set to collect equal volume aliquots of 120 to 140 mils each ever 15 minutes over a 24 hour period. The sample must be maintained at 6 °C at all times											
[3]Percent Removal is calculated using the following equation: $\text{Percent Removal} = \left[\frac{(\text{Monthly Average Influent} - \text{Monthly Average Effluent})}{\text{Monthly Average Influent}}\right] \times 100$											
[4]Daily Maximum											
[5]E. Coli – Escherichia Coli Bacteria											
[6]Thirty (30) day Geometric Mean											
[7]Seven (7) day Geometric Mean											
[8]Total Nitrogen is the summation of the analytical results for Total Nitrates, Total Nitrites, and Total Kjeldahl Nitrogen											

1.3. Standard Effluent Requirements

The discharges to waters of the Commonwealth shall not produce floating solids, visible foam or a visible sheen on the surface of the receiving waters.

1.4. Application Monitoring

POTWs are required to complete application Forms 1 and A which requires a minimum of 3 samples to be collected and analyzed. To ensure that sufficient samples are collected and analyzed DOW shall impose at a minimum annual sampling during years 2 through 4 of the permit term for those parameters required to be analyzed and reported on the application. The results of the application monitoring shall be submitted on an annual DMR and summarized on the renewal application. The permittee shall report the No Discharge (NODI) 9 – Conditional Monitoring Not Required This Period for years 1 and 5 of the permit.

TABLE 3.						
Effluent Characteristic	STORET Code	Units	Concentrations		Frequency	Sample Type
			Average	Maximum		

Temperature (May 1- October 31)	00011	°F	Report	Report	3/5 years	Grab
Temperature (November 1- April 30)	00011	°F	Report	Report	3/5 years	Grab
Total Kjeldahl Nitrogen (TKN)	51449	mg/l	Report	Report	3/5 years	Grab
Nitrate Plus Nitrite Nitrogen	51450	mg/l	Report	Report	3/5 years	Grab
Oil & Grease	00552	mg/l	Report	Report	3/5 years	Grab
Phosphorus (Total)	00665	mg/l	Report	Report	3/5 years	Grab
Total Dissolved Solids (TDS)	70296	mg/l	Report	Report	3/5 years	Grab

SECTION 2

COLLECTION SYSTEM REQUIREMENTS

2. Collection System Requirements

2.1. Prohibitions

The following prohibitions apply to the collection system and its users:

1) There shall be no sanitary sewer overflows (SSOs);
2) No user shall introduce any pollutant or pollutants that will cause pass through or interference with the operation of the POTW and the collection system; or
3) No user shall introduce any of the following pollutants:
    a. Pollutants which create a fire or explosion hazard, including but not limited to, wastestreams with a closed cup flashpoint of less than 140 °F (60 °C);
    b. Pollutants which will cause corrosive structural damage or have a pH less than 5.0 standard units unless the POTW is designed to accommodate such pH levels;
    c. Solid or viscous pollutants in amounts that would obstruct the flow to the POTW thus resulting in interference;
    d. Any pollutant released in a discharge at such a volume or strength as to cause interference in the POTW;
    e. Heat in such quantities that the temperature at the POTW treatment plant exceeds 104 °F (40 °C) unless the POTW requests and the Approval Authority grants alternate temperature limits;
    f. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass-through;
    g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and,
    h. Any trucked or hauled waste except, at discharge points designated by the POTW

All POTW's, in cases where pollutants contributed by user(s) of the collection system are likely to result in reoccurring interference or pass-through, shall develop and enforce specific effluent limits for industrial user(s), and all other users, as appropriate, which, together with appropriate changes in the POTW treatment plant's facilities or operation, are necessary to ensure renewed and continued compliance with the POTW's KPDES permit or sludge use or disposal practices. POTW's with approved Pretreatment Programs meet this requirement.

2.2. Capacity, Management, Operation and Maintenance (CMOM) Program

2.2.1. Applicability

These conditions apply to all permittees with sewage infrastructure including the sewer system and wastewater treatment plant.

2.2.2. Goals

The goals of a comprehensive CMOM Program are:

1) To better manage, operate, and maintain the collection system;
2) Investigate capacity constrained areas of the collection system;
3) Proactively prevent or minimize SSOs;
4) Respond to SSO events; and
5) Proactively prevent or minimize the potential for the release of pollutants from ancillary activities through plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from storage areas.

To achieve these goals permittee shall complete a CMOM self-assessment using the checklist in the "Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems," EPA 305-B-05-002 to determine the scope of the CMOM program. The guide is available at: http://www.epa.gov/npdes/pubs/cmom_guide_for_collection_systems.pdf.

Upon completion of the checklist the permittee shall develop a proposed plan of action to achieve the goals of the CMOM program.

2.2.3. CMOM Plan

At a minimum the plan of action shall include the following:

1) Self-Assessment Summary (including recommended improvements and schedules);
2) Collection System Diagram;
3) Sewer Overflow Response Protocol (SORP);
4) Best Management Practices (BMPs); and
5) Any other constituent programs necessary to achieve the goals of the CMOM program (See http://www.epa.gov/region04//water/wpeb/momproject/documents/r4prgguide.pdf for additional guidance)

2.2.4. Collection System Diagram

The collection system diagram shall include the following:

1) Scale;
2) North arrow;
3) Date the map was drafted and most recent revision;
4) Street names;
5) Surface waters;
6) Service area boundaries;
7) Manholes and other access points (including structure IDs);
8) Sewer lines;
9) Pump stations (including structure IDs);
10) Wastewater treatment plants;
11) Permitted discharge points or outfalls (including CSO outfalls);
12) CSO regulators, for combined sewer systems; and
13) Locations of recurring SSOs that occurred within the last five (5) years prior to the effective date of this permit.

2.2.5. Sewer Overflow Response Protocol (SORP)

At a minimum the SORP shall include the following elements:

1) An overflow response procedure including designated responders for the permittee, response times, and cleanup methods;
2) A public advisory procedure;
3) A regulatory agency notification procedure.;
4) A manhole and pump station inspection schedule;
5) A procedure for addressing discharges to buildings caused by blockage, flow condition, or other malfunction in sewer infrastructure owned or operationally-controlled by the permittee; and
6) A requirement to include the structure ID for reported incidents.

2.2.6. Best Management Practices (BMPs)

BMPs are schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to implement the prohibitions listed in Section 2.1 of this permit. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage.

2.2.7. Implementation

Implementation shall be as soon as possible, but no later than one year from the effective date of the permit or as specified in the schedule of compliance for this permit.

2.2.8. Documentation

The permittee shall maintain all applicable CMOM program documents at the facility and make them available upon request to EEC personnel. Initial copies and modification thereof shall be sent to DOW upon request.

2.2.9. Modification

The permittee shall amend CMOM Programs documentation whenever there is a change in the facility or change in operation of the facility which materially affects the requirements specified in applicable documents.

2.2.10. Modification for Ineffectiveness

If any of the CMOM programs prove to be ineffective in achieving the general objective of preventing and eliminating SSOs and other unauthorized discharges, the permit, and/or specific CMOM programs shall be subject to modification to address deficiencies. If at any time following the issuance of this permit any of the CMOM programs are found to be inadequate pursuant to a state or federal site inspection or review, affected CMOM program documents shall be modified to incorporate such changes necessary to resolve concerns.

SECTION 3

STANDARD CONDITIONS

3. STANDARD CONDITIONS

3.1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of KRS Chapter 224 and is grounds for enforcement action; for permit termination, revocation and reissuance, modification, or denial of a permit renewal application. Any person who violates applicable statutes, who fails to perform any duty imposed, or who violates any determination, permit, administrative regulation, or order of the cabinet promulgated pursuant thereto shall be liable for a civil penalty as provided at KRS 224.99.010.

3.2. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit.

3.3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3.4. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

3.5. Proper Operation and Maintenance

The permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3.6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, termination, notification of planned changes or anticipated noncompliance does not stay any permit condition.

3.7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

3.8. Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

3.9. Inspection and Entry

The permittee shall allow the Director or an authorized representative (including an authorized contractor acting as a representative of the Director), upon presentation of credentials and other documents as may be required by law, to:

(1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by KRS 224, any substances or parameters at any location.

3.10. Monitoring and Records

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities which shall be retained for a period of at least five (5) years (or longer as required by 401 KAR 5:065, Section 2(10), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

(3) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;
(ii) The individual(s) who performed the sampling or measurements;
(iii) The date(s) analyses were performed;
(iv) The individual(s) who performed the analyses;
(v) The analytical techniques or methods used; and
(vi) The results of such analyses.

(4) Monitoring must be conducted according to test procedures approved under 401 KAR 5:065, Section 2(8) unless another method is required under 401 KAR 5:065, Section 2(9) or (10).

(5) KRS 224.99-010 provides that any person who knowingly violates KRS 224.70-110 or other enumerated statutes, or who knowingly renders inaccurate any monitoring device or method required to be maintained under this permit, shall be guilty of a Class D felony and, upon conviction, shall be punished by a fine of not more than $25,000, or by imprisonment for not more than one (1) year, or both. Each day upon which a violation occurs shall constitute a separate violation.

3.11. Signatory Requirement

(1) All applications, reports, or information submitted to the Director shall be signed and certified pursuant to 401 KAR 5:060, Section 4.

(2) KRS 224.99-010 provides that any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 shall be guilty of a Class D felony and upon conviction thereof, shall be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment, or by fine and imprisonment, for each separate violation. Each day upon which a violation occurs shall constitute a separate violation.

3.12. Reporting Requirements

3.12.1. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(i) The alteration or addition to a permitted facility, may meet one of the criteria for determining whether a facility is a new source in KRS 224.16-050; or
(ii) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under KRS 224.16-050; or
(iii) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

3.12.2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

3.12.3. Transfers

This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under KRS 224; see 401 KAR 5:070, Section 5; in some cases, modification or revocation and reissuance is mandatory.

3.12.4. Monitoring Reports

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(i) Monitoring results must be reported on a DMR or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.
(ii) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 401 KAR 5:065, Section 2(8), or another method required for an industry-specific waste stream under 401 KAR 5:065, Section 2(9) or (10), the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
(iii) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

3.12.5. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit, shall be submitted no later than fourteen (14) days following each schedule date.

3.12.6. Twenty-four Hour Reporting

(i) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
(ii) The following shall be included as information which must be reported within twenty-four (24) hours under this paragraph:
(A) Any unanticipated bypass which exceeds any effluent limitation in the permit.
(B) Any upset which exceeds any effluent limitation in the permit.
(C) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within twenty-four (24) hours.

(iii) The Director may waive the written report on a case-by-case basis for reports under paragraph ii of this section if the oral report has been received within twenty-four (24) hours.

3.12.7. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Sections 3.12.1, 3.12.4, 3.12.5 and 3.12.6, at the time monitoring reports are submitted. The reports shall contain the information listed in Section 3.12.6.

3.12.8. Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Director, it shall promptly submit such facts or information.

3.13. Bypass

3.13.1. Definitions

(i) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
(ii) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

3.13.2. Bypass Not Exceeding Limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Section 3.13.1.

3.13.3. Notice

(i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, and if possible at least ten days before the date of the bypass.
(ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section 3.12.6.

3.13.4. Prohibition of Bypass

(i) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
(A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
(C) The permittee submitted notices as required under Section 3.13.3.
(ii) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the conditions listed above in Section 3.13.3.

3.14. Upset

3.14.1. Definition

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

3.14.2. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations, if the requirements of Section 3.14.3 are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

3.14.3. Conditions Necessary for a Demonstration of Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(i) An upset occurred and that the permittee can identify the cause(s) of the upset;
(ii) The permitted facility was at the time being properly operated;
(iii) The permittee submitted notice of the upset as required in Section 3.12.6; and
(iv) The permittee complied with any remedial measures required under Section 3.4.

3.14.4. Burden of Proof

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

SECTION 4

OTHER CONDITIONS

4. OTHER CONDITIONS

4.1. Schedule of Compliance

The permittee shall attain compliance with all requirements of this permit on the effective date of this permit unless otherwise stated below:

4.2. Other Permits

This permit has been issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal, and local agencies.

4.3. Continuation of Expiring Permit

This permit shall be continued in effect and enforceable after the expiration date of the permit provided the permittee submits a timely and complete application in accordance with 401 KAR 5:060, Section 2(4).

4.4. Antidegradation

For those discharges subject to the provisions of 401 KAR 10:030 Section 1(3)(b)5, the permittee shall install, operate, and maintain wastewater treatment facilities consistent with those identified in the approved regional facility plan.

4.5. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved in accordance with 401 KAR 5:050 through 5:080, if the effluent standard or limitation so issued or approved:

1) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
2) Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of KRS Chapter 224 when applicable.

4.6. Sludge Disposal

The disposal or final use of sewage sludge generated during the treatment of domestic sewage by a POTW shall be disposed of in accordance with state and federal requirements [401 KAR Chapter 45 and 40 CFR 503].

4.7. Certified Operators

The wastewater treatment plant shall be under the primary responsibility of Class II Wastewater Treatment Plant Certified Operators or higher.

The collection system shall be under the primary responsibility of Class II Collection System Certified Operators or higher.

4.8. Outfall Signage

The permittee shall comply with the permanent marker requirements of ORSANCO's Pollution Control Standards.

SECTION 5

MONITORING AND REPORTING REQUIREMENTS

5. MONITORING AND REPORTING REQUIREMENTS

5.1. KPDES Outfalls

Discharge samples and measurements shall be collected at the compliance point for each KPDES Outfall identified in this permit. Each sample shall be representative of the volume and nature of the monitored discharge.

5.2. Monthly Operating Reports (MORs)

In addition to the monitoring of effluent as specified by the permit, the permittee shall conduct process control monitoring on a daily basis. Process control monitoring is that monitoring performed by the operators of the wastewater treatment plant to determine if the wastewater system is operating at its optimum efficiency. This monitoring includes but is not limited to influent and effluent quality and quantity monitoring, chemical usage, sludge monitoring including volume produced, wasted, and disposed, and monitoring of internal units such as aeration basins and oxidation ditches.

The data shall be recorded using the Microsoft EXCEL-based Monthly Operating Report (MOR) workbook available of the Department for Environmental Protection's Forms webpage at:

http://dep.ky.gov/formslibrary/Pages/default.aspx

The updated workbook shall be maintained on-site and made available upon request by Cabinet personnel.

5.3. Sufficiently Sensitive Analytical Methods

Analytical methods utilized to demonstrate compliance with the effluent limitations established in this permit shall be sufficiently sensitive to detect pollutant levels at or below the required effluent limit. It is the responsibility of the permittee to demonstrate compliance with permit parameter limitations by utilization of sufficiently sensitive analytical methods.

5.4. Certified Laboratory Requirements

All laboratory analyses and tests required to demonstrate compliance with the conditions of this permit shall be performed by EEC certified general wastewater laboratories.

5.5. Submission of DMRs

Monitoring results obtained during each monitoring period must be reported. The completed DMR for each monitoring period must be submitted no later than the 28th day of the month following the monitoring period for which monitoring results were obtained.

The completed DMR for each monitoring period must be entered into the DOW approved electronic system no later than midnight on the 28th day of the month following the monitoring period for which monitoring results were obtained.

For more information regarding electronic submittal of DMRs, please visit the Division's website at: http://water.ky.gov/permitting/Pages/netDMRInformation.aspx or contact the DMR Coordinator at (502) 564-3410.

MATTHEW G. BEVIN
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE
FRANKFORT, KENTUCKY 40601
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CHARLES G. SNAVELY
SECRETARY

FACT SHEET

City of Brandenburg

KPDES No.: KY0021474

AI No.: 3115

Date: December 23, 2015

Public Notice Information

Public Notice Start Date: October 28, 2015

Comment Due Date: November 27, 2015

Information concerning the public notice process may be obtained on the Division of Water's Public Notice Webpage at the following address:

http://dep.gateway.ky.gov/eSearch/Search_Pending_Approvals.aspx?Program=Wastewater&NumDaysDoc=30

Comments may be filed electronically at the following e-mail address: DOWPublicNotice@ky.gov

SECTION 1

FACILITY SYNOPSIS

1. FACILITY SYNOPSIS

1.1. Name and Address of Applicant

City of Brandenburg
737 High Street
Brandenburg, Kentucky, 40108

1.2. Facility Location

Brandenburg Wastewater Treatment Plant
Buttermilk Falls Road
Brandenburg, Meade County, Kentucky

1.3. Description of Applicant's Operation

Publicly-Owned Treatment Works (POTW) and associated collection system.

1.4. Wastewaters Collected and Treatment

Domestic sewage (residential, commercial, schools, restaurants, etc.) The POTW has a design capacity of 0.312 MGD with the following treatment units:

Screening, Grit Removal, Grinding (Comminutors), Sedimentation (Settling), Rotating Biological Contactors, 2 Cell Lagoon, Disinfection (Chlorine), and Dechlorination.

1.5. Permitting Action

This is a reissuance of a minor KPDES permit for an existing POTW.

SECTION 2

RECEIVING/INTAKE WATERS

2. RECEIVING / INTAKE WATERS

2.1. Receiving Waters

All surface waters of the commonwealth have been assigned stream use designations consisting of one or more of the following designations: Warmwater Aquatic Habitat (WAH), Primary Contact Recreation (PCR), Secondary Contact Recreation (SCR), Domestic Water Supply (DWS), Coldwater Aquatic Habitat (CAH) or Outstanding State Resource Water (OSRW)[401 KAR 10:026].

All surface waters of the commonwealth are assigned one of the following antidegradation categories: Outstanding National Resource Water (ONRW), Exceptional Water (EW), Impaired Water (IW) and High Quality Water (HQ)[401 KAR 10:030].

Surface waters categorized as IW are listed in Kentucky's most recently approved Integrated Report to Congress on the Condition of Water Resources in Kentucky Volume II. 303(d) List of Surface Waters.

The following table lists the stream use classifications associated with this permit.

TABLE 1.

Receiving Water Name	Use Classification	Antidegradation Category	7Q10 Low Flow (cfs)	Harmonic Mean Flow (cfs)
Ohio River	WAH, PCR, SCR, DWS	IW	11,000	49,000

[1]This segment of Ohio River (mile point 614.0 to 676.8) is listed as impaired in the 2012 303(d) List of Waters for Kentucky. Impaired uses are Fish Consumption (Partial Support), PCR (Nonsupport). The pollutants of concern are Dioxin, Mercury, Polychlorinated biphenyls (PCBs), and E. coli. The suspected sources are unknown. Facility does not contribute to Dioxin, Mercury, or PCBs impairments. Facility in compliance with the KPDES permit limitations and requirements will help facilitate an improvement in E. coli.

2.2. Intake Waters – Nearest Downstream Intake

TABLE 2.

Intake Water Name	Public Water Supply Name	Latitude (N)	Longitude (W)	Miles Downstream	7Q10 Low Flow (cfs)	Harmonic Mean Flow (cfs)
Ohio River	Evansville, IN	37°57'27.5"	87°34'27.8"	144	12,900	60,900

SECTION 3

OUTFALL 001

3. OUTFALL 001

3.1. Outfall Description

TABLE 3. KPDES OUTFALL LOCATIONS				
Type of Outfall	Type of Wastewaters	Latitude (N)	Longitude (W)	Receiving Water
Direct	Sanitary	38°00'35"	86°08'55"	Ohio River

3.2. Reported Values

The following table summarizes the reported values for Outfall 001.

TABLE 4.							
Pollutant Characteristic	Units	EFFLUENT					
		Loadings (lbs/day)		Concentrations			
		Monthly Average	Maximum Weekly Average	Minimum	Monthly Average	Maximum Weekly Average	Maximum
Flow, Effluent	MGD	0.08	0.18	N/A	N/A	N/A	N/A
Flow, Influent	MGD	0.09	0.16	N/A	N/A	N/A	N/A
$CBOD_5$[1], Effluent	mg/l	12.98	22.89	N/A	16.97	28.02	N/A
$CBOD_5$[1], Influent	mg/l	220.42	351.26	N/A	357.41	566.28	N/A
$CBOD_5$[1] ,Percent Removal	%	N/A	N/A	N/A	94.77	N/A	N/A
TSS, Effluent	mg/l	24.02	39.23	N/A	35.14	50.19	N/A
TSS, Influent	mg/l	254.85	1039.71	N/A	400.47	889.27	N/A
TSS (Percent Removal)	%	N/A	N/A	N/A	86.45	N/A	N/A
Ammonia (as mg/l NH_3N)	mg/l	9.82	16.40	N/A	12.38	17.78	N/A
E. Coli[2]	#/100 ml	N/A	N/A	N/A	1.03[3]	48.33[4]	N/A
Dissolved Oxygen	mg/l	N/A	N/A	4.24	N/A	N/A	N/A
pH	SU	N/A	N/A	6.0	N/A	N/A	9.43
Total Residual Chlorine	mg/l	N/A	N/A	N/A	0.01	0.01[5]	N/A
Total Phosphorus	mg/l	N/A	N/A	N/A	7.40	7.03[5]	N/A
Total Nitrogen[6]	mg/l	N/A	N/A	N/A	32.83	42.07[5]	N/A
[1]$CBOD_5$ – Carbonaceous Biochemical Oxygen Demand, 5-day							
[2]E. Coli – Escherichia Coli Bacteria							

TABLE 4.							
Pollutant Characteristic	Units	EFFLUENT					
		Loadings (lbs/day)		Concentrations			
		Monthly Average	Maximum Weekly Average	Minimum	Monthly Average	Maximum Weekly Average	Maximum
[3]Thirty (30) day Geometric Mean							
[4]Seven (7) day Geometric Mean							
[5]Daily Maximum							
[6]Total Nitrogen is the summation of the analytical results for Total Nitrates, Total Nitrites, and Total Kjeldahl Nitrogen							

3.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 001.

TABLE 5.									
Effluent and Influent Characteristics	Units	LOADINGS (lbs/day)		EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Maximum Weekly Average	Minimum	Monthly Average	Maximum Weekly Average	Maximum	Frequency	Sample Type
Flow, Effluent (0.312 MGD)	MGD	Report	Report	N/A	N/A	N/A	N/A	Continuous	Recorder
Flow, Influent	MGD	Report	Report	N/A	N/A	N/A	N/A	Continuous	Recorder
BOD_5[1], Effluent	mg/l	78.0	117.0	N/A	30	45	N/A	1/Week	24 Hr Composite[2]
BOD_5[1], Influent	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Week	24 Hr Composite[2]
BOD_5[1] ,Percent Removal	%	N/A	N/A	N/A	85	N/A	N/A	1/Month	Calculated[3]
TSS, Effluent	mg/l	78.0	117.0	N/A	30	45	N/A	1/Week	24 Hr Composite[2]
TSS, Influent	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Week	24 Hr Composite[2]
TSS (Percent Removal)	%	N/A	N/A	N/A	85	N/A	N/A	1/Month	Calculated[3]
Ammonia (as mg/l NH_3N)	mg/l	52.0	78.0	N/A	20.0	30.0[4]	N/A	1/Week	24 Hr Composite[2]
E. Coli[5]	#/100 ml	N/A	N/A	N/A	130[6]	240[7]	N/A	1/Week	Grab
Dissolved Oxygen	mg/l	N/A	N/A	2.00	N/A	N/A	N/A	1/Week	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Week	Grab
Total Residual Chlorine	mg/l	N/A	N/A	N/A	0.011	0.019	N/A	1/Week	Grab
Total Phosphorus	mg/l	N/A	N/A	N/A	Report	Report[4]	N/A	1/Week	24 Hr Composite[2]

TABLE 5.									
Effluent and Influent Characteristics	Units	LOADINGS (lbs/day)		EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Maximum Weekly Average	Minimum	Monthly Average	Maximum Weekly Average	Maximum	Frequency	Sample Type
Total Nitrogen[8]	mg/l	N/A	N/A	N/A	Report	Report[4]	N/A	1/Week	24 Hr Composite[2]
[1]BOD_5 –Biochemical Oxygen Demand, 5-day									
[2]A 24-hour composite is a sample collected using an automated sampler set to collect equal volume aliquots of 120 to 140 mils each every 15 minutes over a 24 hour period. The sample must be maintained at 6 °C at all times									
[3]Percent Removal is calculated using the following equation: Percent Removal = $\left[\frac{(\text{Monthly Average Influent} - \text{Monthly Average Effluent})}{\text{Monthly Average Influent}}\right] \times 100$									
[4]Daily Maximum									
[5]E. Coli – Escherichia Coli Bacteria									
[6]Thirty (30) day Geometric Mean									
[7]Seven (7) day Geometric Mean									
[8]Total Nitrogen is the summation of the analytical results for Total Nitrates, Total Nitrites, and Total Kjeldahl Nitrogen									

3.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW's General Procedures for Limitations Development located on DOW's webpage at:

http://dep.ky.gov/formslibrary/Documents/General%20Procedures%20for%20Limitations%20Development.pdf

3.4.1. Secondary Treatment Standards

Discharges from POTWs are subject to the technology-based effluent limitations (TBELs) known as the Secondary Treatment Standards. Both state and federal regulations establish the requirements for secondary treatment [401 KAR 5:045 and 401 KAR 5:080, Section 8(3) – 40 CFR 133.102 – respectively].

TABLE 6.
State Defined Secondary Treatment Standards

Pollutant or Pollutant Characteristic	30-day average	7-day average
BOD_5 (mg/l)	30	45
TSS (mg/l)	30	45

TABLE 7.
Federal Defined Secondary Treatment Standards

Pollutant or Pollutant Characteristic	Minimum	30-day average	7-day average	Maximum
BOD_5 (mg/l)	N/A	30	45	N/A
BOD_5 Percent Removal (%)	N/A	85	N/A	N/A
$CBOD_5$ (mg/l)	N/A	25	40	N/A
$CBOD_5$ Percent Removal (%)	N/A	85	N/A	N/A
TSS (mg/l)	N/A	30	45	N/A
TSS Percent Removal (%)	N/A	85	N/A	N/A
pH (standard units)	6.0	N/A	N/A	9.0

3.4.2. Reasonable Potential

The following table lists those water quality-based pollutants and/or pollutant characteristics of concern that DOW has determined exhibit reasonable potential and the basis of DOW's determination. These determinations are consistent with the DOW's reasonable potential analysis (RPA) procedures outlined in *Permitting Procedures For Determining "Reasonable Potential"* Kentucky Division of Water May 1, 2000

TABLE 8.

Pollutant or Pollutant Characteristic	Basis
Total Residual Chlorine	The POTW uses a chlorine-based disinfection process on this outfall

Nutrients

These effluent characteristics are generally associated with sanitary wastewaters and organic effluents. While this sanitary facility does include domestic wastewater and organic processes, these constituents are not present in quantities that demonstrate reasonable potential to cause or contribute to an excursion of the narrative water quality standard. As discussed in the DOW's General Procedures for Limitations Development the applicable factors in 40 CFR 122.44(d)(1) and the designated uses established in 401 KAR 10:026 were considered in making this determination.

This permit has been conditioned to collect additional data that may be used to conduct a reasonable potential analysis in the future.

3.5. Justification of Requirements

The Title 401 Chapters 5 and 10 of the Kentucky Administrative Regulations (KARs) and Title 40 of the Code of Federal Regulations (CFR) cited in the following have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes (KRSs) and the Clean Water Act (CWA) respectively.

At a minimum all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards all permits shall contain WQBELs [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. The WQBELs included in this permit are based upon the KYWQS [401 KAR 10:031].

3.5.1. Flow (Effluent & Influent)

The monitoring requirements for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:070, Section 3 – 40 CFR 122.48].

3.5.2. BOD_5 (Effluent)

The effluent limitations for this parameter are the secondary treatment standards for POTWs as defined in both state and federal regulations. [401 KAR 5:045, Section 2, 401 KAR 5:080, Section 8(3) – 40 CFR 133.102]. These effluent limitations are consistent with KYWQS [401 KAR 10:031, Section 4(1)(e) & (i) – respectively].

$CBOD_5$ limit was replaced with a BOD_5 limit due to a typographical error on the previous permit that incorrectly required a $CBOD_5$ limit instead of a BOD_5 limit.

3.5.3. TSS (Effluent)

The effluent limitations for this parameter are the secondary treatment standards for POTWs as defined in both state and federal regulations [401 KAR 5:045, Section 2, 401 KAR 5:080, Section 8(3) – 40 CFR 133.102 respectively]. These effluent limitations are consistent with KYWQS [401 KAR 10:031, Section 4(1)(f)].

3.5.4. BOD_5 (Percent Removal) and TSS (Percent Removal)

The effluent limitations for these parameter are the secondary treatment standards for POTWs as defined in federal regulations. [401 KAR 5:080, Section 8(3) – 40 CFR 133.102]

3.5.5. Ammonia and Dissolved Oxygen

The effluent limitations for these parameters are WQBELs developed using the EPA's River and Stream Water Quality Model (QUAL 2E/K) [401 KAR 10:031, Section 4(1)(e) & (i)].

3.5.6. E. Coli

The effluent limitations for E. Coli are consistent with the KYWQS. [401 KAR 10:031, Section 7]

3.5.7. pH

The effluent limitations for this parameter are both TBELs and WQBELs. The limitations are consistent the secondary treatment standards for POTWs as defined in federal regulations and the KYWQS [401 KAR 5:080, Section 8(3) – 40 CFR 133.102, and 401 KAR 10:031, Sections 4(1)(b) and 7 – respectively].

3.5.8. Total Residual Chlorine

Because no ZID or MZ has been established for this permit the monthly average and daily maximum effluent limitations for this pollutant have been set at the chronic and acute aquatic life criteria in the KYWQS for this pollutant [401 KAR 10:031, Section 4(1)(k)].

3.5.9. Total Phosphorus and Total Nitrogen

The monitoring requirements for this parameter are consistent with the requirements of 40 CFR 122.44(i)(1)(i) as incorporated by 401 KAR 5:065,Section 2(4).

SECTION 4

COLLECTION SYSTEM REQUIREMENTS

4. COLLECTION SYSTEM REQUIREMENTS

4.1. General Prohibitions

The following prohibitions apply to the collection system and its users:

1) There shall be no sanitary sewer overflows (SSOs);
2) No user shall introduce any pollutant or pollutants that will cause pass through or interference with the operation of the POTW and the collection system; or
3) No user shall introduce any of the following pollutants:
    a. Pollutants which create a fire or explosion hazard, including but not limited to, wastestreams with a closed cup flashpoint of less than 140 °F (60 °C);
    b. Pollutants which will cause corrosive structural damage or have a pH less than 5.0 standard units unless the POTW is designed to accommodate such pH levels;
    c. Solid or viscous pollutants in amounts that would obstruct the flow to the POTW thus resulting in interference;
    d. Any pollutant released in a discharge at such a volume or strength as to cause interference in the POTW;
    e. Heat in such quantities that the temperature at the POTW treatment plant exceeds 104 °F (40 °C) unless the POTW requests and the Approval Authority grants alternate temperature limits;
    f. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass-through;
    g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and,
    h. Any trucked or hauled waste except, at discharge points designated by the POTW

All POTW's, in cases where pollutants contributed by user(s) of the collection system are likely to result in reoccurring interference or pass-through, shall develop and enforce specific effluent limits for industrial user(s), and all other users, as appropriate, which, together with appropriate changes in the POTW treatment plant's facilities or operation, are necessary to ensure renewed and continued compliance with the POTW's KPDES permit or sludge use or disposal practices.

These prohibitions are consistent with Kentucky's general prohibition against water pollution, the Combined Sewer Overflow Control Policy of 1994 (CSO Policy), and the national pretreatment standards prohibited discharges applicable to all POTW collection systems [KRS 224.70-110, 33 U.S.C. 1342 (q) and 401 KAR 5:057, Section 3 – 40 CFR 403.5 respectively]

4.2. Capacity, Management, Operation and Maintenance (CMOM) Programs

The permittee shall develop and implement CMOM programs that: (1) better manages, operates, and maintains collection systems, (2) investigates capacity constrained areas of the collection system, (3) proactively prevents or minimizes SSOs, and (4) responds to SSO events.

Guidance for the development of effective CMOM programs is available at the following EPA web address: http://www.epa.gov/npdes/pubs/cmom_guide_for_collection_systems.pdf

This requirement replaces the requirement to develop and implement a Best Management Practices (BMP) plan imposed in prior permits. The imposition of this requirement is consistent with the standard conditions applied to all permits regarding the proper operation and maintenance of all facilities and systems of treatment and control including all related appurtenances [401 KAR 5:065, Section 2(1) – 40 CFR122.41(e)].

SECTION 5

OTHER CONDITIONS

5. OTHER CONDITIONS

5.1. Schedule of Compliance

The permittee will comply with all effluent limitations by the effective date of the permit except as specified below [401 KAR 5:070, Section 2 – 40 CFR 122.47].

5.2. Antidegradation

The conditions of Kentucky's Antidegradation Policy have been satisfied [401 KAR 10:029, Section 1]. This permitting action is a reissuance of a KPDES permit that does not authorize an expanded discharge from a POTW. The POTW has developed an approved regional facility plan in accordance with state wastewater planning requirements for regional planning agencies [401 KAR 5:006]. This approved plan constitutes compliance with socioeconomic demonstration and alternatives analysis of the Antidegradation Policy Implementation Methodology [401 KAR 10:030, Section 1(3)(b)2b].

5.3. Sludge Disposal

The disposal or final use of sewage sludge generated during the treatment of domestic sewage by a POTW shall be disposed of in accordance with state and federal requirements [401 KAR Chapter 45 and 40 CFR 503].

5.4. Standard Conditions

The conditions listed in the Standard Conditions Section of the permit are consistent with the conditions applicable to all permits [401 KAR 5:065, Section 2(1) – 40 CFR 122.41].

5.5. Sufficiently Sensitive Analytical Methods

Analytical methods utilized to demonstrate compliance with the effluent limitations established in this permit shall be sufficiently sensitive to detect pollutant levels at or below the required effluent limit, i.e. the Method Minimum Level (ML) shall be at or below the effluent limit. In that instance where an EPA-approved method does not exist that has an ML at or below the established effluent limitation, the permit shall: (1) use the method specified in the permit; or (2) the EPA-approved method with an ML that is nearest to the established effluent limit [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)].

5.6. Certified Laboratory

All environmental analysis to be performed by a certified laboratory is consistent with the certified wastewater laboratory requirements [401 KAR 5:320, Section 3].

5.7. Certified Operators

Wastewater treatment plants and wastewater collection systems that accept wastewaters containing domestic sewage are to be operated by a certified operator [401 KAR 5:10].

5.8. Application Monitoring

POTWs are required to complete application Forms 1 and A which requires a minimum of 3 samples to be collected and analyzed. To ensure that sufficient samples are collected and analyzed DOW shall impose at a minimum annual sampling during years 2 through 4 of the permit term for those parameters required to be analyzed and reported on the application (Sections A.12 all, B.6 if > 0.1 MGD, and D if ≥1.0 MGD and/or has a Pretreatment Program) [to 401 KAR 5:060, Section 2(2)(b)]. The results of the application monitoring shall be submitted on an annual DMR and summarized on the renewal application [401 KAR 5:065, Section 2(1) – 40 CFR 122.41(j) and 401 KAR 5:070, Section 3 – 40 CFR 122.48].

5.9. Monthly Operating Reports (MORs)

In addition to the monitoring of effluent as specified by the permit, the permittee shall conduct process control monitoring on a daily basis. Process control monitoring is that monitoring performed by the

operators of the wastewater treatment plant to determine if the wastewater system is operating at its optimum efficiency. This monitoring includes but is not limited to influent and effluent quality and quantity monitoring, chemical usage, sludge monitoring including volume produced, wasted, and disposed, and monitoring of internal units such as aeration basins and oxidation ditches.

The data shall be recorded using the Microsoft EXCEL-based Monthly Operating Report (MOR) workbook available of the Department for Environmental Protection's Forms webpage at:

http://dep.ky.gov/formslibrary/Pages/default.aspx

The updated workbook shall be maintained on-site and made available upon request by Cabinet personnel.

These additional monitoring requirements are consistent with state and federal regulations that require the permit to include as appropriate monitoring requirements to assure compliance with the permit limitations [401 KAR 5:070, Section 3 – 40 CFR 122.48].

5.10. Outfall Signage

Kentucky is a member of the Ohio River Valley Water Sanitation Compact (ORSANCO) [KRS 224.18-760]. Article I of the Compact pledges faithful cooperation between the signatory states. Article IV authorizes the Commission to adopt, prescribe and promulgate rules, regulations and standards for administering and enforcing the Compact. The ORSANCO pollution control standards for discharges to the Ohio River require that holders of an individual NPDES permit post and maintain a permanent marker having specific dimensions at each Ohio River outfall. The permittee shall comply with the permanent marker requirements of ORSANCO's Pollution Control Standards.

SECTION 6

OTHER INFORMATION

6. OTHER INFORMATION

6.1. Permit Duration

The permit duration is five (5) years from the effective date unless modified or reissued. This facility is in the Salt and Licking River Basin Management Unit as per the Kentucky Watershed Management Framework.

6.2. Permit and Public Notice Information

The application, draft permit, fact sheet, location map, and public notice are available on the DOW Public Notice web page and the Department of Environmental Protection's Pending Approvals Search web page at:

http://water.ky.gov/Pages/PublicNotices.aspx:

http://dep.gateway.ky.gov/eSearch/Search_Pending_Approvals.aspx?Program=Wastewater&NumDaysDoc=30

Comments may be filed electronically at the following e-mail address: DOWPublicNotice@ky.gov

6.3. References and Cited Documents

All material and documents referenced or cited in this fact sheet are parts of the permit information as described above and are readily available at the Division of Water Central Office. Information regarding these materials may be obtained from the Division of Water's Open Records Coordinator at (502) 564-3410 or by e-mail at DEP.KORA@ky.gov.

Appendix E

KDOW Waste Load Allocation Request Response Letter

MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

AARON B. KEATLEY
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

April 18, 2017

Nicholas Gunselman, E.I.T
Project Engineer
GRW Incorporated
9710 Bunsen Parkway
Louisville, Kentucky 40299

Re: Brandenburg Wastewater Facilities Plan
Waste Load Allocation Request
KPDES No.: KY0021474
Meade County, Kentucky

Dear Mr. Gunselman:

This is in response to your February 27, 2017 correspondence (attached), requesting preliminary limits for updating the City of Brandenburg Regional Wastewater Facilities Plan. Per your correspondence, the Plan calls for wastewater treatment plant (WWTP) upgrades, with no increase in average daily and peak flows. Discharge is to remain at 86°08'55" west longitude and 38°00'35" north latitude near National Hydrography Dataset (NHD) mile point (mp) 643.3 of the Ohio River, segment 08217. The requested waste load allocation information will be utilized in a Regional Wastewater Facilities Plan update.

Considering the above-mentioned information, applicable effluent limitations are provided below.

Design Capacity = 0.312 MGD / Discharge near NHD mp 643.3 of the Ohio River

Parameter	May 1 - October 31	November 1 - April 30
BOD_5	30 mg/l	30 mg/l
Total Suspended Solids	30 mg/l	30 mg/l
Ammonia Nitrogen	20 mg/l	20 mg/l
Dissolved Oxygen	2 mg/l	2 mg/l
Total Phosphorus	Monitor, mg/l	Monitor, mg/l
Total Nitrogen	Monitor, mg/l	Monitor, mg/l
Total Residual Chlorine	0.019 mg/l	0.019 mg/l

Reliability Classification = Grade C

In addition to the above limits, the monthly average and maximum weekly average values of Escherichia coli shall be at or below 130 colonies per 100 milliliters or 240 colonies per 100 milliliters, respectively, the year around. Additional effluent limitations and water quality standards are contained in 401 KAR Chapter 5 and 401 KAR Chapter 10.

These preliminary design effluent limitations are valid for one (1) year from the date of this letter, and are subject to change as a result of additional information which may be presented during the public notice phase of the Kentucky Pollutant Discharge Elimination System (KPDES) permitting process. As such, this letter does not convey any authorization or approval to proceed with the construction or operation of the proposed WWTP. Construction and KPDES permit applications must be submitted to request such authorization or approval. Nor does this letter ensure issuance of either permit. During the review processes of these permits the Division of Water will further evaluate the viability of the project.

Should you have any questions regarding this letter, please contact me at (502) 782-7066 or E-mail at Courtney.Seitz@ky.gov.

Sincerely,

Courtney Seitz

Courtney Seitz, WLA Coordinator
Wet Weather Section
Surface Water Permits Branch
Division of Water

CS
c: Russell Neal, Water Infrastructure Branch
Compliance and Technical Assistance
Branch, Louisville Section
TEMPO

GRW | engineering | architecture | geospatial
9710 Bunsen Parkway | Louisville, KY 40299
502.489.8484 | www.grwinc.com

February 27, 2017

Mr. Courtney Seitz
Wet Weather Section
Surface Water Permits Branch
Division of Water
300 Sower Boulevard
Frankfort, KY 40601

Re: Brandenburg Wastewater Facilities Plan
Wasteload Allocation Request
GRW Project No. 4556

Dear Mr. Seitz:

This letter is to request the preliminary design discharge limits for updating the City of Brandenburg's Wastewater Facilities Plan. The current discharge permit (No. KY0021474) for Brandenburg's WWTP became effective February 1, 2016. The Plan calls for plant upgrades, but the WWTP rated average daily and peak flows will not be increased.

Presently, the discharge outfall of the plant is located on the Ohio River (38°00'35"N & 86°08'55"W). We have included a USGS topo map showing the location of the current WWTP Outfall.

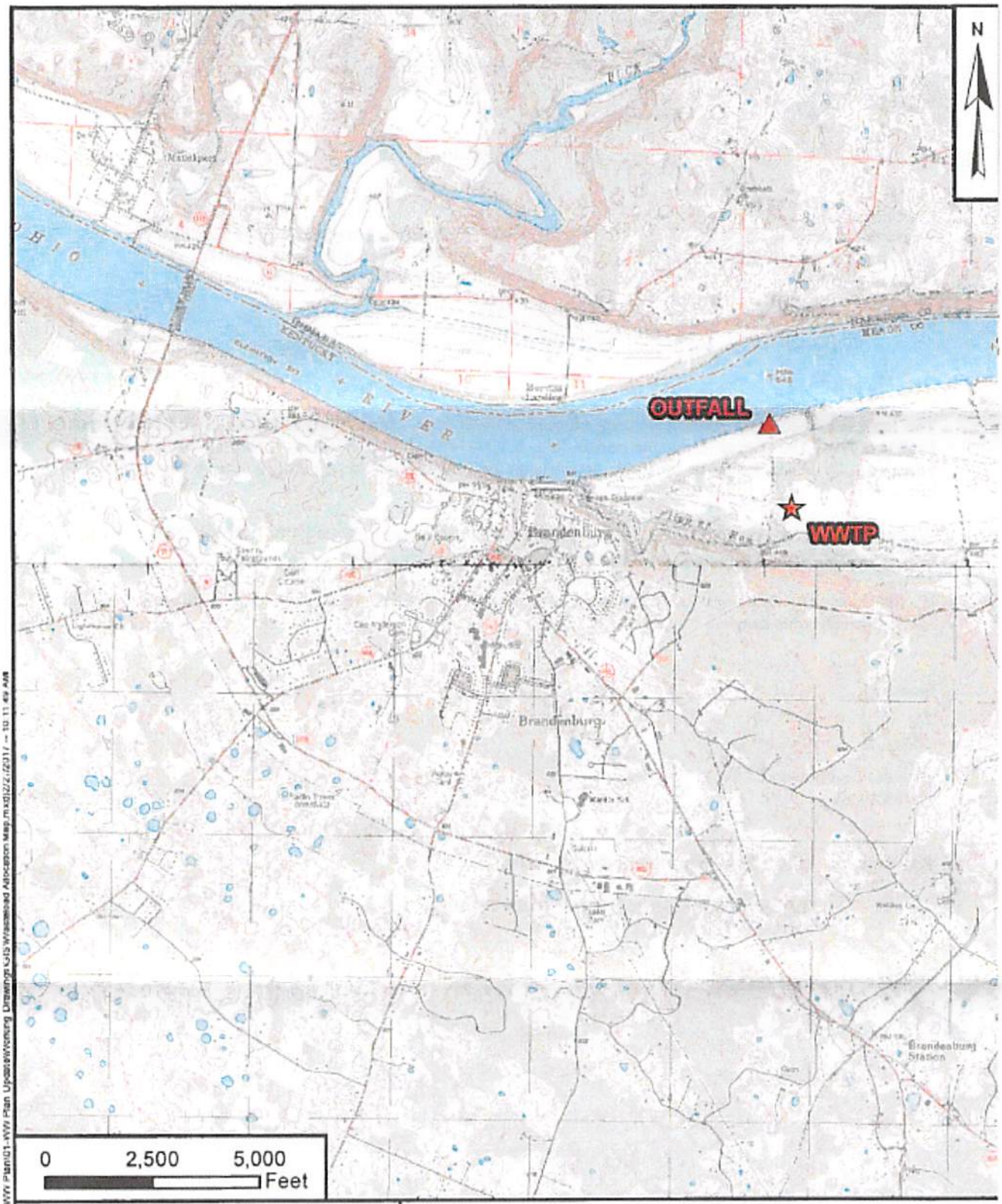
If you have any questions or comments, please do not hesitate to contact me at 502-489-8484, or ngunselman@grwinc.com

Sincerely,

Nicholas Gunselman, E.I.T.
Project Engineer

Enclosure: USGS Topo Map with location of outfall

Cc: T.J. Hughes, Brandenburg Public Works Director
Joseph V. Pavoni, PE, LEED AP, GRW



engineering | architecture | geospatial

Brandenburg Wastewater Treatment Plant
Location Map

CITY OF BRANDENBURG, KENTUCKY